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Lettson
with best respects
from his oblige
friend
The Author

MISCELLANEOUS OBSERVATIONS on CANINE and
SPONTANEOUS HYDROPHOBIA : to which is prefixed,
the HISTORY of a CASE of HYDROPHOBIA, occurring
twelve Years after the BITE of a supposed MAD
DOG. By SAMUEL ARGENT BARDSLEY, M. D.
M. R. M. S. EDIN. and C. M. S. LOND.

READ, OCTOBER 15, 1794.

TO add another instance of the want of
success in the treatment of Hydrophobia,
to the melancholy histories already published,
may appear superfluous and uninstruative. Yet,
when we consider the peculiar fatality of this
disease—the obscurity of its proximate, and,
even, sometimes of its occasional cause—and,
how few opportunities are afforded of minutely
attending to its preceding and attendant phæno-
mena,

mena, there may be some reason to imagine, that every faithful description of facts will be productive of advantage; and may probably at length lead to the establishment of a just theory, and a successful mode of cure. The following case has a peculiar claim to attention, on account of the great distance of time, from the bite of a supposed rabid animal, to the appearance of the disease. It is, indeed, a difficult task, to ascertain a fact of this nature; and especially, when enquiries are to be made from ignorant and prejudiced persons. As it is, however, a matter of the utmost importance to be established, no pains have been spared, to gain every intelligence, which the Patient and his friends were capable of communicating. The result of the enquiry is in favour of the Patient's repeated assertion: "That he had
" never suffered the least injury, from any ani-
" mal; except the bite, inflicted twelve years
" since, by an apparent mad-dog."*

John

* The Patient had lived at the village of Ashworth, near Bury, from the period of the bite, till within two months of his death, when he removed to Fearn Gore, in the same neighbourhood. An enquiry was made in every family, at both places, relative to there having been any mad animal in their neighbourhood, during Lindsay's residence among them; and, if so, whether they had ever
heard,

John Lindsay, weaver at Fearn Gore near Bury, in the county of Lancaster, aged thirty-six, of middling stature, and spare habit of body, and of a temperament inclined to the melancholic, was brought into the Manchester Lunatic Hospital, on Friday May the sixteenth, 1794, about three o'clock in the afternoon. He was immediately visited by Dr. Le Saffier, who obligingly communicated to me the following particulars. The Patient expressed feelingly his sense of danger, from the persuasion that his disorder proceeded from the bite of a mad dog. He was desired to drink a little cold water, which on being presented to him he rejected, with every appearance of disgust and horror. Being again strongly urged to drink, he made the attempt, and with great exertion got down a small quantity of the liquid. He was perfectly rational, but appeared apprehensive of danger from the least noise, or approach of any person towards him. He expressed a desire to make

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water,

heard, or suspected, that he had been bitten, or otherwise exposed to the danger of infection. They all agreed in returning a negative answer to both these questions. I ought further to observe, that as both these villages contain few families, and these, without one exception, having dwelt in the same place, from the time of the Patient's coming among them, to the attack of his complaint, their evidence in support of the Patient's declaration, is complete and satisfactory.

water, and was quitting the room for that purpose; but no sooner had he approached the door than he suddenly retreated; complaining of an unpleasant sensation he felt from the cold air, and particularly that it produced a convulsive twitching, about his throat. To screen him from the effects of the air, when conveyed from the examining room into the Hospital, an umbrella was held over his head, and his body closely muffled up in a wrapping cloak. As soon as he had got into his apartment, he ate some bread and cheese, but with difficulty; and requested to be allowed to drink some buttermilk. He attempted to swallow this liquid, and in part succeeded; but not without the most violent struggling efforts, attended with distortions of his countenance, which remained slightly convulsed for some time afterwards.

A consultation of the Physicians of the Hospital being called by Dr. Le Saffier, and the assistance of Dr. Percival, Physician extraordinary to the charity, requested; the latter Gentleman, in concurrence with Dr. Le Saffier, (the rest of the Faculty being out of the way) entertained not the least doubt of this Patient being afflicted with genuine Hydrophobia. As the disorder was far advanced, and might, indeed, be considered as nearly terminating, being the third day from the appearance of the symptom

tom of Hydrophobia, little or no advantage could be expected from medicine. He was ordered, however, about four o'clock the same afternoon, to take a bolus composed of twelve grains of musk, two grains of opium, and six grains of camphor. Two drachms of strong mercurial ointment were also directed to be rubbed in upon the throat and breast. I saw the Patient, in company with the other Physicians, about six o'clock the same evening; and we found him very willing, and sufficiently composed, to give a distinct account of the circumstances preceding the disease, and to describe his sufferings since its attack. The following particulars were collected. He has been industrious, sober, and regular in his mode of living; but subject to low spirits from the difficulty he found, at times, of maintaining a wife and six young children. His exertions, however, were in general proportionate to his difficulties. But of late, from the depreciation of labour, he found, that the most rigid œconomy and indefatigable industry were not sufficient to ward off, from himself and family, the calamities of hunger, debt, and the most abject poverty. The anxiety of his mind now became almost insupportable. As the last refuge for his distress, he applied, a few days previous to the attack of his complaint, to the Overseers of his Parish for their assistance to pay his rent, and thereby pre-

vent the seizure of his goods; but obtained no relief. Overwhelmed with grief and disappointment, he yielded to despair, resigning himself and family to their wretched fate. He was soon roused from this state of fancied apathy, by the piercing cries of his children demanding bread. In a paroxysm of rage and tenderness, he sat down to his loom on the Monday morning, and worked night and day, seldom quitting his seat, till early on the ensuing Wednesday morning. During this period of bodily fatigue and mental anxiety, he was entirely supported by hasty draughts of cold buttermilk, sparingly taken. Nor did he quit the loom, until his strength was completely exhausted. He then threw himself upon his bed, and slept a few hours. On waking, he complained of giddiness and confusion in his head, and a general sense of weariness over his body. He walked five miles that morning, in order to receive his wages, for the completion of his work; and, on his return, felt much fatigued, and troubled with a pain in his head. During the night, his sleep was interrupted by involuntary and deep sighs—slight twitchings in the arms—and a sense of weight and constriction at the breast. He complained of much uneasiness at the light of a candle, that was burning in the room. On evacuating his urine, he was obliged

obliged to turn aside his head from the vessel, as he could not bear the sight of the fluid without great uneasiness. Being rather thirsty, he wished for balm tea to drink; but was unable to swallow it from a sense of pain and tightness, which he experienced about the throat, when the liquid was presented to him. He suddenly exclaimed, on perceiving this last symptom, "Good God! It is all over with me!" and immediately recalled to his Wife's recollection, the circumstance of his having been bitten,* twelve years ago, by a large dog apparently mad; which was flying from the pursuit of a number of people, on the high road between Warrington and Manchester.

During the whole of Thursday, his abhorrence of fluids increased; and he now began to feel an uneasy sensation on being exposed to the air. The slight twitchings of his arms were also increased to sudden startings; attended with a violent agitation of his whole body. He had
suffered

* Soon after this accident, he applied to a Surgeon at Ashton in this neighbourhood, who dressed the wound for a short time, and ordered the Ormskirk medicine to be taken. The wound was speedily healed; and the Patient had never distrusted his being cured, till the moment he was unable to swallow liquids. I wrote to the Surgeon, with a view of obtaining particular information relative to the state of the wound, &c.; but, the circumstance had altogether escaped his memory.

suffered much from his journey, being brought eight miles in an open cart. I perceived at this time (half past six, Friday evening) that his countenance expressed the utmost anxiety; his breathing was laborious and interrupted; and he complained of a dull pain, shooting from the arms towards the præcordia and region of the stomach. A livid paleness overspread his face; the features were much contracted; and the temples moistened with a clammy sweat. He suffered greatly from excessive thirst, and dryness of the mouth and fauces.*

An unusual flow of viscid saliva occasioned him to spit out frequently. He complained of a remarkably fetid taste in his mouth, and a loathsome smell in his nostrils. He ate some bread and butter, at his own request, but with great difficulty, as he was obliged to throw his head backward, in order to favour the descent of the morsel down the gullet. He was requested to wash down this solid food, with some liquid; and he expressed a readiness to make the trial. On receiving a basin of buttermilk, he

* We now examined the part that had been bitten, and discovered a slight *cicatrix*, almost obliterated, upon the origin of the *Tendo Achillis* of the left leg. He had never suffered any pain, nor complained of the slightest uneasiness, in that or the neighbouring parts, since the wound healed. No alteration in the colour of the skin was perceptible.

he hastily applied it, with a determined countenance, to his lips; when he was instantly seized with so severe a spasm and rigidity of the muscles of the neck, that he was compelled, in an agony, to desist from drinking. Shortly after, he raised himself upon his knees in bed, took the bowl again into his hands, and by forcibly stretching his neck forward, at the moment he received the liquid into his mouth, and then violently throwing his head backwards, he succeeded in swallowing a small portion. He appeared highly gratified with the success of this effort, and the fortitude he had exhibited; and exultingly demanded another draught of the butter-milk, as he now thought he could conquer the difficulty he had hitherto experienced. But a violent return of the spasms in the throat and neck checked this attempt. These convulsions were terminated by the stomach discharging the liquid previously swallowed, highly tinged with bile. I perceived that he had conveyed a piece of orange, under the bed cloaths, which at intervals he applied to his mouth by stealth, and as it were unperceived by himself; for he constantly hurried it to his lips, when his attention appeared to be engaged on other objects. This stratagem did not succeed. No sooner had the morsel touched his mouth, than he was seized with convulsions about

about the throat, and a stricture at the breast. I saw him again, in consultation, at eight o'clock this evening. He had taken two doses of the bolus; and the ointment had been carefully rubbed in. He appeared rather more composed, but expressed great anxiety at the idea of being left alone. He courted eagerly the conversation of those around him; apparently from the motive of withdrawing his mind from the contemplation of his miserable state. The repugnance he felt at swallowing liquids, and the uneasiness occasioned by the attempt, he now considered as his chief complaints; and was determined to conquer the first by perseverance, and an undaunted resolution. His spasms seemed to be somewhat mitigated, as he got down a little milk-porridge with less difficulty than usual. A repetition of his medicines every three hours, was ordered during the night. At nine o'clock the next morning (Saturday) he was visited again; and we learned that he had passed the night without a moment's rest, frequently shouting out with looks of horror, and sometimes wailing in broken and confused murmurs; but, on being spoken to, he always returned rational answers. He was now alarmed to a degree of distraction, at being left alone. He examined every object with a timid and suspicious eye; and, upon the least noise of a footstep

footstep in the gallery, he begged, in the most piteous accents, to be protected from harm. He had never offered the least violence to any one, since the commencement of the disease; and, even now, when the encreased secretion of saliva occasioned him to spit out very frequently, he apologized to the by-standers, and always desired them to move out of the way. I observed, he frequently fixed his eyes, with horror and affright, on some ideal object; and then, with a sudden and violent motion, buried his head underneath the bed-cloaths. The last time I saw him repeat this action, I was induced to enquire into the cause of his terror.—He eagerly asked, if I had not heard howlings and scratchings? On being answered in the negative, he suddenly threw himself upon his knees, extending his arms in a defensive posture, and forcibly throwing back his head and body. The muscles of the face were agitated by various spasmodic contortions;—his eye balls glared, and seemed ready to start from their sockets;—and at that moment, when crying out in an agonizing tone:—“Do you not see that black dog?” his countenance and attitude exhibited the most dreadful picture of complicated horror, distress and rage, that words can describe, or imagination paint!—The irritability of the whole system was now become excessive. He

discovered the highest degree of impatience on the least motion of the air. Every action was accompanied with that hurry and inquietude, which marks an apprehension of danger from surrounding objects. The oppression of the præcordia was evidently encreased; and, when he gasped for breath, the whole body was writhed with convulsions. His speech was interrupted by convulsive sobs. The pulse was tremulous and intermitting; and, at some times, so hurried as not to be counted. He had frequent retchings, and brought up occasionally small quantities of a yellow liquid. Solids were now swallowed with excessive difficulty; and the attempt always produced strong spasms about the neck and breast. At ten o'clock (the same morning) we met in consultation; when the medicines were ordered to be repeated every two hours, with an increase of the dose of opium, from two to three grains. Half an ounce of strong mercurial ointment was ordered to be rubbed in, over the surface of the body, and a sponge dipped in vinegar to be constantly held to the mouth and nostrils. At four o'clock the same day, the consultation was renewed. We found the patient had been able to swallow his boluses without much difficulty, and had drank several times with infinitely more ease than usual; but, the fluid had been immediately rejected by the stomach, and had come
up,

up, deeply tinged with yellow. His countenance exhibited a cadaverous aspect. His voice was hoarse, indistinct, and faltering. He complained of a fixed pain at the region of the stomach; which he had felt, more or less, during the disease. The pulse was feeble, and scarcely perceptible. He swallowed some tea with less difficulty, than had been observed since his entrance into the hospital. His dissolution was apparently drawing near: yet, it was deemed advisable to order his body to be rubbed with warm oil; and one ounce of that fluid to be taken every half hour, or as often as the stomach would bear it. His mental faculties at this period suffered very little derangement; for although, when not attending to external objects, he would utter some incoherent sentences; yet, the moment he was spoken to, he was perfectly collected, and returned rational answers. At half past four o'clock, he submitted willingly to have his body rubbed with the oil, and for that purpose sat down upon the side of the bed; when he was seized with an instantaneous convulsion, threw himself backward—and expired without a groan! An immediate inspection of the body would have been a desirable circumstance: but, we were obliged, (however reluctantly) from unavoidable impediments, to defer the dissection

till the following morning. Accordingly, on Sunday morning, about ten o'clock, the body was opened in the presence of one of the physicians, myself, and two of the Surgeons belonging to the charity. I have to regret that the examination did not extend to the brain; and indeed, that a more minute investigation of the morbid appearances, accompanying this fatal malady, did not take place. But, such was the peculiar horror inspired by a view of the progress and catastrophe of the disease, that the accustomed dread of danger arising from any examination of an hydrophobic subject, was increased in this instance, to a tenfold degree. Besides, the well known prejudices entertained by the country people, against the opening of dead bodies, rendered us anxious to finish the inspection before the arrival of the patient's friends, who were hourly expected. In the cavity of the thorax no unusual appearances were discovered; except, that the surface of the lungs appeared of a darker hue, and more distended with blood than usual. No inflammation appeared on an inspection of the fauces; nor were the muscles of the Larynx or Pharynx in the least discoloured. The stomach and Œsophagus were removed from the body, and subjected to particular inspection. A longitudinal incision was made through the whole
cavity

cavity of the Œsophagus, but not the least marks of disease were discovered. Upon opening the stomach, evident traces of inflammation were observed. It commenced at the superior orifice, and was there confined to small and irregular spots of a dark red colour; and might also be traced in a linear form, and of a brighter red, along the curvature of the stomach, terminating at the pylorus in large and irregular spots of a gangrenous appearance. The contents of the stomach did not exceed three ounces; and consisted, chiefly, of the medicines that had been swallowed, mixed with a dark coloured fluid. All the other viscera of the abdomen exhibited no marks of disease.

The novelty and importance of the case above related, will, I trust, sufficiently apologize for the following enquiry. That it exhibits the genuine symptoms of *RABIES CANINA*, will not be doubted by those, who have had opportunities of seeing the malady, or have consulted the best authorities on the subject. The dread of liquids; the peculiar and distressing anxiety about the præcordia; and the morbid irritability of the nervous system, which were all experienced by this patient, leave no room for doubt concerning the resemblance of the disease to that which is the offspring of the canine poison. When we reflect on the length of the interval,
from

from the infliction of the bite of a supposed rabid animal to the appearance of this disease, an important question naturally arises:—Are we to consider this case as arising from the influence of the canine poison; or as an instance of what authors have termed spontaneous Hydrophobia? A variety of cases, related by different writers, seem to prove the existence of Hydrophobia, unconnected with the bite, or agency of the poison, of any rabid animal. The generality of systematic authors mention the occurrence of canine madness at the distance of many years from the application of the poison of a distempered animal. It has, also, been asserted, that the contact of the saliva of a mad animal with the body is capable of producing Hydrophobia. Indeed, some authors have gone so far as to maintain, that the volatile parts of the saliva, being carried off with the breath of a rabid animal, have been capable of producing the disease, when received into the stomach or lungs of any person.

I am fully sensible of the caution to be observed, in drawing positive inferences from the generality of medical histories on this subject:—For an attachment to the marvellous; a blind obedience to authority; and a rage for hypothesis seem to have possessed the ancient systematic writers, who have treated on this malady. In
order,

order, therefore, to appretiate the credit due to these various histories, and to the opinions derived from them, I shall only cite the most respectable authorities; and, indeed, chiefly confine my attention to those cases, which have been subjected to the inspection of their respective relaters. I proceed, therefore, to consider, first, the histories and facts that have been adduced in favour of the opinion, that the canine poison has lain dormant for a great length of time, and afterwards been excited into action: Secondly, those cases, which have been attributed to the contact of the saliva of a rabid animal with the surface of the skin; or to its application, internally as well as externally, by any other mode than the intervention of a bite: Thirdly, such instances of the disease, as have been said to have arisen spontaneously, * or, at least, whose origin

* I have adopted the term "Spontaneous Hydrophobia," in conformity with the usage of the generality of medical writers. But I wish it to be understood in a sense different from that, in which it is commonly used. For, notwithstanding all the usual symptoms of canine madness have arisen in many cases, without the intervention of the poison of a rabid animal, I do not conceive, in such instances, any specific poison to have been generated in the habit—The canine virus operates, not only as a stimulus on the nerves, but also appears to produce a specific action

origin could not be traced to a bite, or any other mode of infection, from a rabid animal.

I. It

action in the salivary glands, and thereby effects a change in their secretions: at least, this change takes place in the canine race.—But, there is no proof of such an assimilation of the saliva occurring in any instance of hydrophobia, arising spontaneously, or excited by any other cause than that of the poison of a mad animal. Therefore, as we know that a variety of stimulant powers are capable of producing effects analogous to those excited by the canine virus, it is more consistent with the rules of just induction, to attribute the symptoms of spontaneous hydrophobia to the operation of these powers, than to have recourse to the vague conjectural idea of their being produced by a specific poison, generated in the body. Nosologists have considered spontaneous hydrophobia, as a *species* of the Genus HYDROPHOBIA; but their definitions are inaccurate—It is the HYDROPHOBIA *simplex* of Dr. Cullen, and is defined: HYDROPHOBIA (*simplex*) sine rabie vel mordendi cupiditate,” in contradistinction to the first species, which he describes to be: “HYDROPHOBIA (*rabiosa*) cum mordendi cupiditate, ex morfu animalis rabidi.” The second species of Cullen corresponds with the HYDROPHOBIA *spontanea* of Sauvages, as his first agrees with the HYDROPHOBIA *vulgaris* of the same author. These definitions do not rest upon facts. For, so far is the “cupiditas mordendi” from being an essential symptom in the HYDROPHOBIA *rabiosa*, that it very rarely occurs in that disease—On the contrary, this symptom has taken place in several cases of the HYDROPHOBIA *simplex* or spontaneous Hydrophobia, related in the course of this enquiry; but, it by no means seems to be an essential symptom of the disease, in either species.

I. It is difficult to ascertain any precise period for the appearance of this disease, after the communication of the poison. From forty days to three months, may, perhaps, be considered, taking modern writers for our guides, as the average distance of time—But the interval of the appearance of the disease from its supposed cause, according to some writers, is so indeterminate, as to include a period of time, from one day, * to forty years. † There are, however, several well authenticated cases, in which the disease occurred at the distance of six months, one year, and even a longer period, from the communication of the virus. In the *Act. Norimberg.* ‡ a well marked case of canine madness is described of a gardener, who was bitten September the 25th. 1720, and died, hydrophobic, on the 8th. of May, 1721.—Another indisputable case is recorded, in the same work, of a patient who fell a victim to the malady nearly a year from the date of the infection. In the *Ephemerides N. C.* § the history of a young woman, bitten by a rabid animal, is detailed; in which it appears, that the poison

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* Medical Comment. vol. V. p. 304.

† Morgagni, de Caussis et Sed. Morbor. epist. viii. art 21.

‡ Observ. 7. vol. i.

§ Ann. 7mo. obs. 148.

lurked dormant for the space of one year, and then proved fatal.

Galen * asserts from his own knowledge, that the disease in one instance did not appear till after the space of a year, from the communication of the poison. Actuarius † affords a similar proof of the disease occurring six months, and, even, one year, from the date of the bite. Dioscorides ‡ has observed, that although the disease, for the most part, discovers itself in forty days after the infection; yet, in some instances, six months and even a year have intervened. Though we may be fully warranted to conclude, from the testimony of the above authorities, to which many later examples might have been added, that the symptoms of canine madness have not been manifested till so long a period as twelve months after the infliction of the bite; yet we can place little dependance on the testimony of many authors, who have

* “Novi sane & quendam, qui, exacto anno, in eum incurfit affectum, quem Hydrophobiam vocant.”

GALEN. *lib. Prorrhet. sect 2. com. 17.*

† “Attamen post sex menses, & anno elapso, invadere contigit, ut nos ex experientia comperimus.”

ACTUAR. *Method. Medendi. Lib. viii.*

‡ “Cum enim ut plurimum ad quadragesimum usque diem differri consueverit; neglectis tamen quibusdam, post semestrem, imo etiam post annum, supervenisse observabimus.”

DIOSCORID. *Lib. vi. Cap. 3.*

have endeavoured to prove the occurrence of this disease, at the distance of five, seven, and, even twelve years, from the communication of the poison. Salius,* who ransacked all the writers of antiquity on this subject, has brought forward a variety of instances to prove the existence of these facts. But we shall find, that Salius has been contented to rely on very slender evidence, for the proof of his assertions. For instance: he quotes the authority of Dioscorides as certifying the appearance of canine madness, after an interval of seven years from the infection: yet, what does this testimony of† Dioscorides amount to? To nothing decisive: for, it goes no farther than to observe, that *some writers* have related seven years to have elapsed from the communication of the poison to the appearance of the disease. Schenkius, Zacutus, Guinerius, Platerus, &c. and, almost all the systematic writers of the 16th. and 17th. centuries have imitated the conduct of Salius. The Arabians furnished them with some authorities,

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which

* “ Hinc aliqui ad dies plures, alii ad menses, aliqui
 “ anno exacto, rabie corripiuntur; in nonnullisque pro-
 “ ditum memoriæ ab antiquis habemus—hunc morbum
 “ ad quintum, septimum, & duodecimum annum, dilatum
 “ fuisse.” SALIUS *de affect. partic.* p. 360.

† “ Sunt, qui narrent, nonnullos post septennium, eo
 “ affectu, correptos fuisse.” *Lib. vi. Cap. 8,*

which may generally be traced to the Grecian writers; and these, for the most part, relied on hear-say testimony, or, the inaccurate histories of supposed cases of Rabies canina. Albertus Magnus * speaks positively, indeed, of a case, that fell under his own observation, in which the disease appeared after an interval of seven years from the bite of a rabid dog. Guenerius † has, likewise, pledged the authority of a friend; whom he esteemed worthy of credit, for the occurrence of rabies canina, eighteen years after the patient had been bitten by a mad dog. The disease proved fatal on the third day. Salmuth, ‡ after quoting from various writers several instances of Hydrophobia taking place at the period of eighteen or nineteen years after the bite, relates one case, from his own authority, in which the symptoms occurred several years after the patient had been bitten by her husband, who died of Hydrophobia.—Among later writers on this subject, the same habit of indiscriminate quotation and easy credulity may be

* “ Vidi hominem morsum a cane rabido in brachio, & anno septimo post incepit inflari locus cicatricis, & mortuus est infra duos dies.”

ALBERT. MAG. *de Histor. animal. Lib. xvii.*

† “ Quod cuidam, post decimum octavum annum a cane rabido morso, metus aquæ accesserit.”

Tract. de Venenis.

‡ SALMUTH, *Cent. 1. obs. 96.*

be observed. Even the accurate Morgagni, * when treating on this subject, does not form an exception to the charge. He has quoted an authority from the German Ephemerides, † to support his assertion, that the canine poison has lain dormant for twenty years, and then proved fatal. On consulting the original it appears, that Morgagni either never read the case, but took it upon loose authority; or has drawn false conclusions from a statement of the facts. For the writer of this case relates, that his patient had been several days afflicted with a malignant fever; and also complained of a pain in the fauces, which were inspected by a surgeon, and found inflamed. ‡ Surely this last symptom, added to the great debility the patient laboured under, sufficiently accounts for the aversion to swallow liquids, and the consequent disgust experienced at the bare mention of them; without recurring (with the Physician) to the idle story of the patient being bitten twenty years ago, by a dog supposed to be mad. In the other instance, of § forty years intervening
between

* *Epist. Anatom. viii. Art. 21.*

† *Ephem. N. C. Ann. 9 & 10. obs. 43.*

‡ “Fauces erant siccissimæ, & tandem ob defectum
“humidi inflammabantur; malignitas indies crescebat;
“deliria accedebant, & octavo morbi die animam efflavit.”

§ *Loc. prox. cit.*

between the bite and the disease, the authority which Morgagni has borrowed is extremely suspicious and unsatisfactory. Gaspar a Reies, * to whom he has referred, after collecting at random a number of marvellous cases from different authors, closes the list with a case on the authority of Alzaharavius, in which the interval of forty years took place from the date of the infection to the appearance of the disorder. It would, therefore, appear from this enquiry into the facts brought in support of the inactivity of the canine virus for so long a period, that these writers have either been mistaken in referring the origin of the disease to a supposed far distant cause, when the actual one had escaped observation, or that they erred from too readily adopting vague and hearsay testimony.

II. With respect to the influence of the canine virus in producing hydrophobia, when applied merely to the surface of the body, I apprehend we must receive the various authorities, in favour of the fact, with some degree of caution. That the disease has occurred from the contact of the saliva of a rabid animal with the

* "Quod magis est, Alzaharavius, propria experientia, testatur, venenum per quadraginta annos in corpore delituisse."

Elysiun Jucundar. Question. Q. 61. N. 11.

the skin, independently of any bite, or the infliction of an apparent injury, I would not venture to deny: but that no imperceptible rasure of the skin by the teeth of the animal, or exposure of the true skin from a previous scratch—destruction of a pimple—or any accidental injury had not taken place, in most of these cases, I am rather inclined to doubt. In the German Ephemerides,* an instance is related of Hydrophobia occurring from the mere contact of the saliva of a mad animal, without the infliction of a bite.† Johan. Mathæus de Gradibus has furnished us with an instance of this disease, arising from a person applying his hand to the mouth of a mad dog. In this case,‡ though no bite was inflicted, yet the disease manifested itself at some distance afterwards. Matthiolus advises us not to treat with neglect the instances that have been adduced by various authors, of the production of Rabies Canina, by the mere contact of the saliva with the

* Ann. 7. Ob. 121.

† “Non quidem commorsa, sed tantum saliva ex ore
“spumante hinc inde in corpore commaculata esset;
“octavo die, vehementi rabie correpta est, & tertia die
“placidè obiit.”

‡ “Johan. Coqueranus infectus fuit rabie post multos
“dies, ex sola impositione manūs in os canis rabidi; et
“cum canis non momorderit.”

JOH. MATHOEI Consul. No. 82.

the naked body. He strengthens this cautionary advice, by bringing forward his own * authority to prove the occurrence of the disease, from the mere aspersions of the saliva on the bodies of two of his patients. Fab. Hildanus, in a letter to his friend Doctor Abel Roscius of Lausanne, laments the incredulity of many persons, who had treated as fabulous the account he had given of a remarkable case of Hydrophobia, arising solely from a woman having applied her lips and tongue to that part of a garment which had been torn by a mad animal. In order, therefore, to banish the scruples of the most sceptical, he subjoins a † history of the case, and pledges his veracity for the truth of the relation. To render this narration the more probable, he adds two cases which fell under his inspection, the year following the
above

* “ Quippe quod duos ego viderim, qui *spumâ tantum*, nullo quidem ex morfu accepto vulnere, rabiem contraxerunt.”

MATTHIOL. *Comment. lib. 6.*

† “ Matronæ cuidam in via obviam canis rabiosus, qui vestem ejus dentibus arripiens, huc et illuc trahebat; donec tandem, veste laceratâ, *cute tamen mulieris illæsa et intacta*, canis aufugit: illa, vero, nescia canem rabiosum fuisse laceratam vestem, *filo dentibus abscisso*, resarcire cœpit.—Tribus mensibus pòst, visionibus horribilibus et pavoribus agitari cœpit, et aquam et vinum odisse, et, quod pejus est instar canis latrare, dentibus domesticos arripere. &c.”

FAB. HILDAN. *cent 1. Obs. 86.*

above mentioned event. The first is particularly deserving of attention, as it affords certain proof of the danger to be apprehended, if the slightest rasure of the skin be exposed to the action of the canine virus. It is the case of a young man, who received a scratch from a rabid cat, and that of so slight a kind as scarcely to rase the Epidermis. * This accident happened the summer preceding that in which the disease occurred.—He died on the third day of the attack, under all the genuine symptoms of hydrophobia. It is probable in the present instance, that the claw of the animal was the medium by which the saliva was communicated to the injured cuticle. If this were the fact, how inconceivably virulent must be the action of this poison, when so small a portion as could be conveyed by such an instrument as the claw of a cat, was capable of producing the malady!—The second case referred to by Hildanus, arose from the slightest bite imaginable of a rabid animal. This accident proved fatal to the sufferer. The well-known history which †Cælius Aurelianus relates (founded on report only) of a woman suffering the baneful effects of the canine poison, from merely applying her tongue and lips to the infected threads of a garment,

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which

* *Obs.* 86.

† *De morb. acut.* lib. 3. cap. 9.

which had been torn by a mad dog, might justly have been considered unworthy of credit, had not the case of Hildanus, and a similar one mentioned by Doctor Hamilton,* served to corroborate the testimony of this author. Cardan has also recorded the circumstance of his being called in to assist at a consultation, in a case of Hydrophobia; and, on an enquiry being made into the cause of the malady, the by-standers confessed, that the patient had kissed a rabid dog, previous to its being hanged.† The patient died the following day, according to the prognostic of his Physicians. These instances are corroborated by the following case. It was communicated to me by Dr. Percival, and is supported by his own respectable authority. A man residing at Worrall in Cheshire, during his being asleep and lying on the ground, was licked about the mouth by an infected dog; but suffered *no bite*, nor the *slightest apparent injury* of the skin. He was, however, seized about the usual period with symptoms of Hydrophobia; and died of the disease, notwithstanding the usual preventive means had been adopted previous

* HAMILTON "*On Hydrophobia*," p. 22.

† "Adstantes confessi osculasse rabidum canem antequam emitteret suffocandum:—Mortuus autem est sequente die, ut nos prædixeramus."

CARDAN, *Contradiet.* 9. *Traet.* 5. *lib.* 2.

vious to its attack. Aretæus* affirms, that the breath of a mad animal being taken into the lungs of any person by inspiration, will produce the disease. This may be considered, however, as a bare assertion, unsupported by any demonstration. Palmerius† has related the history of a whole family, who were infected from kissing their father, in compliance with his request, when just expiring of canine madness. §

III.

* “Quinetiam et a rabido cane, qui in faciem dum spiritus adducitur tantummodo inspiraverit, et nullo pacto momorderit, in rabiem homo agitur.”

De causis et signis Morbor. Lib. i.

† *De Morbis contagiosis. p. 266.*

§ I conceive this extraordinary history (and one related by Salmuth) deserving of little credit. Palmerius and Salmuth are the only writers (that I am acquainted with) who have stated, *from their own knowledge*, that a bite from any person afflicted with canine madness, has been capable of communicating that disease to any of the human species:—An abundance of negative facts might be brought to contradict this statement. But, as no absolute conclusion can be derived from them, I would suggest the following reasons for rejecting the testimony of the above-mentioned writers. First—If the saliva of an infected human-being were capable of producing canine madness in another of the same species, surely many instances of this kind must have occurred to the numerous writers on this subject; especially, when the chance of persons being exposed to the danger of such an accident is so great, that, from *two* cases only, which I have seen, *four* people were subjected

III. I come now to the consideration of the instances of spontaneous Hydrophobia. Its occasional causes are various; fright—sudden and violent affections of the mind—wounds received from enraged animals—the drinking of cold water, when the body has been previously heated—excessive fatigue in hot weather—have all been assigned by different writers, as the occasional causes of this complaint. Indeed, in some instances, it has been difficult, if not impossible, to trace its origin to any occasional cause. The following cases, carefully selected from a variety of more equivocal authority, will prove the efficiency of the above mentioned occasional causes in producing this disease; and also demonstrate, that it has sometimes occurred where no occasional cause has apparently preceded. The five cases recorded by Marcellus Donatus, and considered, by Morgagni,* as
affording

to the danger of receiving the infection: two of them, by kissing the patient, and the rest, by having had the saliva in contact with fresh wounds in their hands. Yet they all escaped without using any preventive means. Secondly, Dr. Vaughan has failed in his experiment of returning the disease from the human species to the dog. He inoculated that animal with the saliva of a rabid person, but without producing any effect. Thirdly, Salmuth and Palmerius are both fond of the marvellous; and their writings seem better calculated to excite surprize, than to convey information.

* *Epistol. Anatom.* 8, art. 31, 32.

affording certain proof of the existence of spontaneous Hydrophobia, are particularly intitled to attention. Unquestionably, Morgagni was little scrupulous in misleading his readers, when he brought forward *all* these cases, as *equally* demonstrative of the existence of this malady. If he had examined them with his usual accuracy, he would have found no room to censure the scepticism of those, who differed with him in considering *them all* as undoubted instances of Spontaneous Hydrophobia. For, notwithstanding we might give credit to the relation of Donatus, so far as respects the absolute freedom from suspicion, in all these cases, of any infection having been communicated by a rabid animal; yet it does not follow that they ought to be considered as cases of Hydrophobia, unless their symptoms warrant such an inference. In the first case,* the complaint appears to have arisen either from a laceration, or spasm of the Œsophagus; or a Paralysis of the muscles of the Pharynx. The patient was seized suddenly at dinner, with a violent pain and constriction in and about the throat, which he attempted to remove by drinking some liquor, but found himself unable to swallow it. He remained incapable either of eating or drinking till the next day, when he swallowed some grapes, but
would

* MARCELL, DONAT. *lib.* 6. p. 96 et 294.

would not be persuaded to attempt to get down any liquid. He died the same evening.

2d. A woman was seized with a pain in her arm, attended with a violent tremor of the whole body. On the third day the pain ceased, but the trembling continued. She experienced a sense of suffocation about the breast. If wine, water, or broth were presented to her, she fell into convulsions, and even faintings. She was able to swallow solids with perfect ease. The faculties of sense and reason remained unimpaired.* Her disposition was mild, and her conversation tranquil. She expired on the fifth day of the disease.

3d. A young woman was alarmed at seeing a combat with swords: she had all the violent symptoms of Hysteria, with the dread of liquids superadded. Indeed, the shock appears to have been so violent, as greatly to injure the sensorium; for she was highly delirious, intractable, and feverish. She died on the fifth day of the disease.

4th. A husbandman, 27 years of age, after his usual labour of the day, complained of a pain in his arm. On the eighth day of this complaint,

* "Si vinum, aqua aut jusculum propinetur, convellitur et deficit: ova ac panem probe sumat: facultates principes ac sentientes valde constant," &c.

complaint, he was seized with slight shiverings. He retired to rest on that evening, without having any inclination to eat. The family were alarmed in the night by his frequently uttering loud shouts, and at times requesting he might be restrained from injuring any one. His respiration was laborious and interrupted. Donatus being called in to his assistance, privately prognosticated, that the patient would refuse to drink; and if he attempted it, would not succeed; and also that his death was approaching. These events succeeded each other according to the prediction of the Physician; and the patient died in the space of four hours.

5th. A healthy and robust countryman, was attacked suddenly with sweatings and a constriction, attended with anxiety about the precordia.* The instant Marcellus Donatus saw the patient, he predicted, that he would neither swallow liquids, nor live many hours. The prognostic was speedily verified: for, when cold water was offered to the patient, he was seized with a sudden horror and fainting. The water being removed he presently recovered.† He would by no means suffer any one

to

* “Cum angustia cordis et agonia.”

† “Namque ægrotanti oblatam frigidam aquam, ipse
“repentè horrescit, et linquitur animo; eâ reductâ, actu-
“tùm reviviscit.”

to approach him ; nor could he bear, without great emotion, the sweat to be rubbed from his face. If by accident the napkin fell upon his face, or pressed lightly upon it, he seemed extremely afflicted and irritated. He expired in a few hours. Marcellus Donatus affirms, that in all these cases the strictest enquiry was made, both from the sufferers and their friends, relative to the patients having ever been exposed to the influence of the canine poison ; and that they assured him there was not the slightest suspicion of a circumstance of that kind ever having happened to any of them. Morgagni * cites the authority of Kochlerus for two cases of Hydrophobia, in which the disease arose from the patients drinking cold water when violently heated. In the *Journal de Medecine*,† there are two instances recorded of Hydrophobia arising from excessive fatigue, by a long march in hot weather. Gui. Patin‡ has also noticed the occurrence of this disease from similar causes. The German *Ephemerides* § contain a singular case of Hydrophobia from the bite of an enraged dog. The case is related by the physician who attended the patient. Jacob Otten, having chastised a
dog

* *Epist. prius cit. Art. 31.*

† *Tom. 7. Juillet. An. 1757. p. 3 & suiv. Tom. 8 Aout. p. 81, p. 1757.*

‡ *Tom. 1. p. 275. Tom. 3, 169.*

§ *Ephem. N. C. An. 6. Ob. 9. p. 187.*

dog which had devoured a favourite hen, was bitten by the animal in the wrist. He was visited by his physician on the following morning. The patient complained of great stricture and anxiety about the breast; his countenance appeared stern and distressed; the tongue and throat were dry and parched, but not the slightest inflammation was visible in those parts. Although at first he was able to bear the sight of liquids, he now shuddered at them with extreme aversion. He declared some time after when pressed to drink, that he was not able, without feeling the most excruciating torments, to look upon, much less to swallow liquids. The wound had healed during the time he suffered these complaints. He died about the sixth day of the disease. The dog was not mad, as he was alive and well long after the patient died. Another case described in the same work,* by Doctor J. B. Scarra-muchi, claims a particular attention, on account of the symptoms being so strongly marked. A young man, in a paroxysm of rage from some domestic troubles, bit the index finger of his left hand, at about eight o'clock in the evening. On the next day at four o'clock, P. M. he was seized with slight shiverings, accompanied with a vomiting of bile. At this period he expe-

M m m rienced

* An. 9. in Append. p. 249.

rienced a dread of water,* and every other kind of liquid—nor was he able to bear the sight of polished and strongly illuminated objects. To such a degree was the abhorrence of water felt, as to occasion a sense of suffocation at the bare mention of it. He afterwards became delirious, spitted upon the by-standers, and was with difficulty restrained by violent coercion from injuring them. He vomited large quantities of bile, and a dark coloured fluid. His strength sunk gradually, and he expired in the space of a few hours.† Johan. Hen. Brechfeld has related the case of a gentleman, who was seized with hydrophobia in so violent a degree, as not to be able to swallow the smallest portion of any liquid. He had no difficulty in swallowing solids. On the third day of the disease he spitted at the by-standers; and suddenly expired in his chair on the next day, after an attack of one or two general convulsions. Upon a strict enquiry being made into the cause of his complaint, and particularly with respect to his having been at any time exposed to infection from

* “Versus horam 16 aquam, omnemque alium liquorem, necnon corpora lucida et candida abhorrescere incepit, ita ut etiam ad aquæ mentionem strangulari videretur.”

† Aët. Hafniens, An. 1682.

from a mad animal; he declared, when perfectly rational, that he could not recollect such an event to have happened;* nor was he able to assign any cause for the origin of his disorder. I consider the following case related by Dr. M. Lister,† as deserving particular notice. If it be not considered an instance of Hydrophobia, occurring without the agency of the canine poison, we must be compelled to grant, that the bite of a dog proved infectious when no symptoms of disease had appeared in the animal at the time the wound was inflicted, nor for six weeks afterwards. The writer of the case has not made us acquainted with the fate of his animal at any subsequent period. Now that a rabid dog should be capable of communicating the infection, previous to any symptom of the disease having discovered itself, is in direct opposition to general opinion. It is likewise equally repugnant to particular experience,‡ and to the analogy to be observed

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* “An a cane rabido demorsus unquam fuerit? A me interrogatus (cum mente adhuc constanti) se id non meminisse aiebat.”

† Tract. de morbis quibusdam chronicis. Histon. I.

‡ In order to obtain satisfactory information on this point, I wrote to Hugo Meynell, Esq. whose knowledge on the subject of the diseases of dogs must be superior to most others,

in the operation of most other infectious diseases. Besides, the length of time (above six weeks) from the bite to the death of the patient, exceeds the general period assigned for the fatal termination of madness in dogs.^a Doctor Hunter,* in his ingenious paper on this subject, observes, that the disease generally proves fatal to dogs *in three weeks*. Is it not then a little extraordinary, that Doctor M. Lister should have expressed no doubts, relative to the power this dog had of communicating the infection, when he confesses the animal appeared free from any symptom of madness, at the time the patient

others, from his long experience and attention to whatsoever regards their health and safety. He obligingly returned the following answers, to some queries I had proposed. — 1st. “Madness generally appears between a month and six weeks after the bite; about a fortnight is the shortest, and eight months the longest period I have known it to appear in after the bite.” 2d. “I know no instance of a dog apparently in good health having communicated the disease; but I have known the disease to have been communicated by a dog that, to one who was not a nice observer, or was not well acquainted from experience with the symptoms of canine madness, might have appeared in perfect health.” 3d. “I am not acquainted with any instance of a dog having apparently recovered, and then relapsed, after the symptoms of the disease had once appeared.”

* See Transactions of a Society for the improvement of medical knowledge, vol. i. p. 295.

patient died? * I shall quote such passages, from the history of this case, as will certify, beyond dispute, the identity of the symptoms with those usually exhibited in canine madness. A young man was slightly bitten in the arm by his own dog. The animal returned quietly home with him on the same evening. The wound was suffered to heal spontaneously. About forty days after the accident happened, the patient was seized with flying pains over his whole body; but especially about the region of the præcordia. On the day following he was troubled with a constant inclination to vomit, attended with violent twitchings at the stomach. With great difficulty he was able to swallow his saliva. He refused to drink some water which Doctor Lister presented to him. His countenance now exhibited great distress. He was able to swallow solid food when presented in a spoon. On the fourth day these symptoms had increased to the highest degree: To swallow his spittle now became so dreadfully difficult, as to threaten instant suffocation. The sight of water was terrible. Every object inspired him with dread. His mind was, however,

* “ Neque illud silentio prætereundum est, ipsum canem a quo morsus est, hominem eâ nocte secutum esse; imò *ipse canis vivus et sanus esse videbatur, quo tempore homo mortuus est.*”

however, sufficiently composed to frame his will ; and he inspected his book of accounts. He had no suspicion of the nature of his complaint until Doctor Lister made some enquiries. On the same evening he expired strongly convulsed, immediately after making an effort to swallow some beer.

The frequent occurrence of an aversion to fluids, and of great difficulty in swallowing them in women affected with Hysteria, has been noticed by many writers.* Some of these facts demonstrate, that all the symptoms of canine madness have been brought on by violent affections of the mind, in irritable and delicate habits. The fatal termination of some of these instances, tends further to confirm the strictness of the analogy between canine madness and hysteria. Platerus † takes notice of a singular instance of hydrophobia in consequence of terror. A woman, of an irritable state of nerves, was much alarmed at being left alone by her companions on the banks of a river, where she had been employed in washing linen. As the evening approached, her fears increased. After returning home she was seized with a violent sobbing, and was almost in danger of suffocation. These symptoms increased daily ;

* MORGAGNI, MEAD, SCHENKIUS, PLATERUS, &c.

† *Observ. Med.* PLATER, *Lib.* 1.

daily; and an utter aversion to fluids supervened. The motion of the air, and the appearance of luminous objects, were equally offensive. She expired under the pressure of these symptoms on the eighth day of the disease. Sauvages * has recorded a fatal example of hydrophobia in a young woman, in consequence of the mind being violently agitated, during a morbid and irritable state of the body. In this patient, the sight of any kind of fluid produced dreadful convulsions, and it was not possible to prevail upon her to swallow any medicine. The patient died three days after the accident. A variety of cases might be cited, in proof of the strict similarity between the symptoms of Hysteria and Rabies Canina from the Ephemerides N. C. I shall content myself, however, with
having

* “ Une servante ayant été vivement pressée par un
 “ jeune homme dans le temps de ses règles, cette évacua-
 “ tion s’arrêta, et quelques heures après, le jeune homme
 “ ayant renouvelé ses tentatives, la fille entra dans une
 “ espèce de fureur. Dès ce moment elle se plaignit de
 “ douleurs vagues par tout le corps, et ces douleurs furent
 “ suivies d’une fièvre ardente, et d’un délire si violent,
 “ qu’il fallut lier la malade. Ces accidens furent suivis
 “ de *l’hydrophobie la plus décidée*. A la vue de toute espèce
 “ de liquide, la malade tomboit dans des convulsions
 “ affreuses; elle rejetoit jusqu’ aux alimens solides, et il
 “ ne fut pas possible de lui faire aucun remède. Elle mourut
 “ trois jours après son accident.”

having stated the above ; and proceed to draw some inferences from the general recital of preceding facts.

I. That the poison of a rabid animal may lay dormant in some instances for the period of twelve, and even twenty months : yet that the cases related by various authors, where canine madness is said to have occurred at the distance of *seven, twenty, and forty years*, from the communication of the poison, may be justly considered as either instances of spontaneous hydrophobia, or of such diseases as occasionally exhibit the anomalous symptoms—of an inability to swallow fluids, and an aversion at the sight of them:—The poison of a mad animal has had no share in their production.

II. That the mere application of the saliva of a rabid animal to the skin, especially to those parts where its structure is of a thin and delicate texture ; such as the lips, tongue, &c. has produced the disease of canine madness ; but that the inspiration of the breath of a mad animal by any person, has ever produced this complaint appears highly improbable, and is not supported by positive facts. III. That local irritation from wounds in irritable habits, especially when conjoined with a perturbed state of the passions ; and, also violent affections of the mind, independently of corporeal injury, in hysterical and hypochondriacal constitutions, have

have produced all the pathognomonic symptoms of canine madness; and finally, that violent alternations of heat and cold, and all other causes, which induce great debility, and at the same time increase the irritability of the system, have at times proved adequate to the production of symptoms, exactly corresponding with those of Rabies Canina. Perhaps the following observations may tend to elucidate, more fully, the propriety of adopting the above inferences.

I. I conjecture that those writers who noticed the occurrence of canine madness at the distance of seven, twenty, and even forty years, from the supposed communication of the virus, have either been mistaken, in considering the anomalous symptom of an inability to swallow fluids, which is sometimes met with in fever, hysteria, and other diseases, as an effect of the animal poison; or have been ignorant that Hydrophobia has occurred in particular habits, without the possibility of assigning any specific cause for its production. Moreover, it is a fact founded on the observation of a considerable number of cases, that upon the average, not more than one* person, out of twenty-five who

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have

* See HAMILTON's Treatise on Hydrophobia; DR. VAUGHAN's "Two Cases of Canine Madness;" and DR. HUNTER's Paper on this subject in the Transactions already quoted.

have been certainly exposed to the bite of a mad dog, has become infected with the disease. Therefore, when symptoms of Hydrophobia have appeared at the distance of many years from the bite of an animal really infected, no positive conclusion can be drawn from this circumstance; as the disease is by no means a certain consequence of the bite. II. Notwithstanding the host of negative facts which may be brought to disprove the occurrence of infection from mere contact of the saliva with the skin, yet the positive facts already quoted from good authorities are of such force, as to stamp conviction on the mind, of the possible, though rare occurrence of canine madness from this cause. If this conclusion be just, may we not imagine in some cases, where the poison is said to have manifested itself after a very long interval from the bite of a rabid animal; and, indeed also in some of those cases which have been considered altogether as spontaneous, that the poisoned saliva may have been *recently* communicated, either indirectly, through the unsuspected medium of the cloaths, or directly, by fondling*
or

* It is not possible to use too strict precaution in avoiding a familiarity with strange dogs. DR. HUNTER, in the work before alluded to, has remarked, that almost all the accidents related to the society arose from taking notice of strange dogs.

or playing with an animal, not known to have been rabid? That such accidents very rarely occur, will be readily granted; yet, as they seem to be within the limits of probability, an important lesson is held forth to medical practitioners, not to neglect those cases where the saliva has been communicated merely to the skin, without any visible injury being sustained. III. The histories of Hydrophobia, related by different Authors, as arising from local irritation of wounds, or from violent affections of the mind, operating suddenly and powerfully on the nervous system, merit a due consideration. The credibility of these histories seems not only to be confirmed, but also the strict analogy between their symptoms and those of canine madness to be farther illustrated, by the occurrence of Hydrophobia in some cases of Tetanus. Facts of this kind have been observed, and commented upon, by two celebrated Physicians.* Doctor Rush† has remarked the joint similarity of some species of Tetanus, with Hydrophobia. Having particularly noticed the symptoms of irritability and debility — and the sense of strangulation felt on swallowing liquids — as occurring in both maladies, he justly inferred, that these diseases were nearly related in their proximate cause of ner-

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* DR. PERCIVAL and DR. RUSH.

† Essay on Tetanus — Medical Inquiries, v, 1.

vous irritation, and therefore required the same mode of cure. With equal sagacity, and by a striking coincidence frequently to be met with among men of talents and observation, Doctor Percival* had pointed out the same resemblance between these diseases, and had also suggested a similar mode of cure, previous to the publication of Dr. Rush on this subject. Both these Authors have produced several cases to confirm their opinions. The following striking instance of similitude between Tetanus and Hydrophobia was communicated to me by Dr. Percival. The case occurred since the publication of his valuable observations on canine madness, and was sent to him through the medium of Doctor Haygarth. Mr. Wilmer of Coventry, well known by his many ingenious works, attended the patient, and furnished the description of the case.—“ A young gentleman, pupil to a Surgeon of this town, had the middle finger
“ slightly wounded by a splinter of wood, on
“ its internal edge, and just over the part where
“ a nerve accompanies the artery to the end of
“ the finger. In about a week the little wound
“ healed. A day or two after, he complained
“ of a stiffness in his throat and neck. This he
“ attributed to his having taken cold. The
“ complaint

* *Essays Med. and Experim.* vol. II.

“ complaint increased, and extended to the
“ muscles of the face and jaw. The muscles
“ which move the lips were affected with spasms.
“ A pain was felt about the scrobiculus cordis.
“ In three days the lower jaw was locked. The
“ convulsive motions of the muscles of the face
“ recurred only at intervals. He had taken, dur-
“ ing the three first days, Tincture of Opium
“ with Camphor Julep, in large quantities. On
“ the third day his lower jaw was less fixed, but
“ he could take no more of his fluid medicine;
“ and all watery drinks he found impossible
“ to swallow. Whenever they approached his
“ mouth, the convulsive spasms of the face re-
“ turned, and his head was forcibly drawn
“ backwards. He was now ordered opium in
“ a solid form, which was persevered in with-
“ out effect. Clysters of asafætida, opium, &c.
“ were repeatedly given. The nerve leading to
“ the part affected was divided transversely with
“ the knife. On the fifth day he appeared some-
“ what better, when we were hastily called to
“ him, as he was supposed to be dying. Uni-
“ versal convulsions, (during which the mucus
“ was plentifully collected in the corners of his
“ mouth) seized him. In the space of twenty
“ minutes the spasms ceased. Electricity was
“ proposed, and tried. After he had received
“ a few shocks, the convulsions returned, and
“ in

“ in less than ten minutes he died. Doctor
“ Simson, Mr. Cole, and Mr. Whitwell, as
“ well as myself, attended him; and we were
“ all of opinion, that if the symptoms I have
“ described had followed the bite of an ani-
“ mal, instead of the injury done to his finger
“ by a splinter of wood, we should have had
“ some difficulty in determining whether the
“ disease was Tetanus or Hydrophobia. A-
“ bout ten years since I attended a patient, whose
“ symptoms were nearly similar to those above
“ related, and which were the consequence of a
“ bite from a horse. After opium, and other
“ antispasmodics, were ineffectually tried, he
“ recovered by the use of electricity.”

If there were any necessity for additional proofs of the occurrence of Hydrophobic symptoms, in cases of local injury, a variety of instances might be brought forward, from Hildanus, Cœlius Aurelianus, Schenkus, and other writers. But the fact seems to be sufficiently established. It appears then, that the occasional causes productive of spontaneous Hydrophobia, operate either locally or generally upon the nervous system, by increasing its irritability, and at the same time inducing debility. It is also sufficiently evident, that the action of the canine poison produces similar effects. But its superior mischievous activity, in comparison with any other occasional cause,

cause, cannot be denied. Yet I apprehend we ought to attribute the more fatal virulence of the canine poison, rather to the difference in degree, than in the nature of the cause. For undoubtedly, the identity of effect warrants the conclusion of an identity of the cause. Happy would it be for the patient, as well as grateful to the practitioner, if farther practical experience in the mode of cure, should confirm the truth of the above inference!

In the *Act. Norimberg.* Tom. II. there is a case of Hydrophobia related, in which all the symptoms of canine madness were combined with Hysteria. A cure was effected by the exhibition of tonic and antispasmodic medicines. Doctor Nugent's extraordinary case of Hydrophobia affords a similar proof of the efficacy of these remedies.

In both these instances, the symptoms appeared altogether in as violent a degree as in any case of canine madness. We may then rationally expect, that application and perseverance will at length discover a remedy sufficiently powerful to counteract the virulent effects of the canine poison.

From a review of the whole of the preceding facts and observations, are we to consider the unhappy case prefixed to this enquiry, as arising from the bite of a rabid animal, inflicted twelve
years

years since; or may we, with more probability, attribute the disorder to some unobserved or forgotten communication of the canine poison with the skin; or, finally, must we not be compelled to view this case as a genuine instance of spontaneous Hydrophobia? It is with diffidence that I incline to the last opinion. But when I reflect that we have no authentic testimony of the canine poison lying dormant more than twenty months at farthest; that Hydrophobia, with all the pathognomonic symptoms of Rabies Canina, has been produced by other occasional causes than the infection of a rabid animal; and also that notwithstanding a person should have been really exposed to the canine poison, the chances are greatly in favour of his not being infected—I am compelled to conclude, that this patient fell a victim to other causes, than the poison of any rabid animal. Nor do I conceive that the effects detailed in this case are disproportionate to the power of the supposed causes. We ought to consider the melancholic temperament of this patient, so much predisposed to mental and corporeal irritation—the weight of his affliction at the heart-rending prospect of his family's distress—his unremitted, but ineffectual efforts to remove these calamities—and the scanty portion of sustenance he allotted to himself, during this almost unexampled struggle of strenuous

strenuous exertion, against famine, debt, and despair! Add, to these circumstances, the effects of imagination in aggravating the violence of the disease. For, although the patient's dread of liquids did not arise from this cause, as he felt a difficulty in swallowing them previous to being impressed with a remembrance of his having been bitten by a supposed mad dog, yet the moment this idea took possession of his mind, he considered his recovery as hopeless. The image of the dog haunted his imagination with perpetual terrors; and the expectation of a violent death, by being smothered, (a vulgar and unjust persuasion too often entertained) would not a little tend to increase the nervous irritation already excited. I have before mentioned, that this case, from the disease being in a very advanced stage, was considered as irremediable. Nevertheless, such remedies were administered as are usually recommended in the cure of this complaint. Among these the external and internal use of oil were tried; but indeed, at so late a period, as not to afford any great expectation of relief being obtained. It may not be improper to mention here an idea that occurred to me on reading the two cases related by Doctor Shadwell,* in which he trusted solely to the exhibition of this remedy. In one instance it

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* *Memoirs of the London Medical Society*—last vol.

proved successful, but failed in the other. Dr. Shadwell attributes its failure in the case of the boy, to the difficulty he experienced in swallowing it, joined to an extreme repugnance to make the attempt; so that only a very small portion (in comparison with what the man took) could be forced down. As this difficulty of swallowing fluids, and consequent aversion to them, arises from the morbid irritability of the fauces, and muscles subservient to deglutition, I conceive, that the impediment to the use of oil, (as well as other fluids,) might be overcome, by adopting the same mode of administering it, as was practised by the late Mr. John Hunter,* to convey food into the stomach of a patient, who

* "The instrument made use of was a fresh eel skin of rather a small size, drawn over a probang, and tied up at the end where it covered the sponge, and tied again close to the sponge where it is fastened to the whale bone, and a small longitudinal slit was made into it just above this upper ligature. To the other end of the eel skin was fixed a bladder and wooden pipe, similar to what is used in giving a glyster, only the pipe large enough to let the end of the probang pass into the bladder without filling up the passage. The probang thus covered was introduced into the stomach, and the food and medicines were put into the bladder, and squeezed down through the eel skin. But as cases of the kind may occur where eels cannot be procured, a portion of the gut of any small animal, as a cat or a lamb, will make a very good substitute." History of a case of Paralysis, &c. in the Transactions already quoted.

who was afflicted with a Paralysis of the Œsophagus, and consequently was unable to swallow any nutriment. By this mode the oil could not come in contact with the irritable parts of the gullet, but would immediately enter into the stomach, and thereby afford to the patient that chance of relief which the remedy has been said to have effected, at least in one instance. It is well known that the Antients relied greatly upon the use of this remedy. Cœlius Aurelianus,* among other antient writers, recommends its use; but was aware that in most cases it could not be swallowed, and therefore orders its exhibition by another mode.

Since I entered on the discussion of this part of my subject, I have read with great satisfaction an account,† by J. Williams, Esq. of the surprising efficacy of a remedy against the deleterious effects of the bite of several snakes; and especially of the Cobra de Capello. These facts are not only interesting, as pointing out a certain and simple mode of rescuing those exposed to the bite of these venomous reptiles, from almost inevitable death, but also highly deserv-

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* “Quod ita facere poterimus, si calidam atque oleum clystere per podicem injiciamus; et si fieri poterit, diurnis diebus, parvum quidem tunc enim poterit contineri.”

CÆL. AUREL. *lib.* 3, 231, *de morb. acut.*

† Asiatick Researches, vol. II. p. 323.

ing attention, as they demonstrate an analogy between the symptoms arising from the poison of some snakes, and those produced by the bite of a rabid dog. And surely, in the treatment of so fatal a disease as canine madness, it is proper to adopt any method of cure founded upon rational principles. Analogy, under these circumstances, seems to be our surest guide.

The author of this discovery has detailed several cases, selected from a variety of others, which terminated with equal success. His method of cure entirely consists in the external application to the bitten part, and internal exhibition, of the spirit of the caustic volatile alkali.* *Eau de Luce* (which is generally at hand) answers as well; but he, with reason, prefers the pure caustic Alkali, when it can be readily met with. This remedy has uniformly put a sudden stop to the baneful effects of the poison of the *Cobra de Capello*.

The action of this poison seems to be chiefly confined to the nervous system, and resembles that of the canine virus, in exciting convulsive spasms about the throat and fauces,† difficulty
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* The "*Aqua ammoniac puræ*" of the College Dispensatory:

† Case 2d. p. 325.

"In July 1782, a woman of the Brahmen cast, who liv in my neighbourhood at *Chumar*, was bitten by a

in swallowing, and a flow of saliva from the mouth. Whether the remedy acts specifically, by destroying the quality of the poison, or generally, by stimulating the nervous system, cannot with certainty be determined. But I am inclined to adopt the latter opinion. At all events it is abundantly proved, that the effects of a most deadly poison (which acts violently on the nerves) have been counteracted by the operation of a certain medicine. There is, therefore, sufficient reason to hope, that its exhibition in canine madness may be attended with salutary effects. For, if two distinct kinds of poison, generated by different creatures, produce similar phenomena in the human constitution, we may fairly conclude that these effects originate from the same proximate cause. There will certainly be great, if not insuperable

“Cobra de Capello, between the thumb and fore-finger of
“her right hand: prayers and superstitious incantations
“were practised by the Brahmens about her till she became
“speechless and convulsed, with locked jaws, and a profuse
“discharge of saliva running from her month. On
“being informed of the accident, I immediately sent a
“servant with a bottle of volatile caustic alkali spirit, of
“which he poured about a teaspoonful, mixed with water,
“down her throat, and applied some of it to the part
“bitten. The dose was repeated a few minutes after, when
“she was evidently better, and in about half an hour was
“perfectly recovered.”

able difficulty, in administering caustic volatile Alkali Spirit (necessarily diluted with a portion of some mild and insipid liquor) in Hydrophobic cases, where the increased sensibility of the fauces to irritation, and the dread of liquids, are so strongly felt. Perhaps it would be advisable, in such cases, to mix the volatile alkali with crumbs of bread, and form the mass into bolusses; or rather, to exhibit the caustic volatile salt enveloped in wafer paper. By this latter method the pungency of the medicine would be concealed, and its form might enable the Patient to swallow it with greater facility.

Before I conclude this subject, I cannot avoid hinting at the necessity of adopting some general plan, for preventing the communication of the canine virus by infected dogs, to animals of the same species. The great increase* of mad dogs, and the consequent ravages of canine madness among the human species, during the course of the present year, (1794) demand the serious and speedy attention of the Legislature. For I conceive Government alone to be capable of establishing a plan of prevention on so extended a scale, as may afford a rational prospect of totally eradicating this dreadful malady. Nor
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* No less than forty persons applied to the Infirmary at Manchester, in the course of a fortnight, who had been bitten by dogs undoubtedly mad.

is the project so hopeless as might, on a slight consideration, be imagined. If the fact be sufficiently established, which Mr. Meynell has asserted from experience—That he preserved his Kennel from canine madness for a series of years, by making every new hound perform quarantine for a certain time, previous to his admission among the pack,* it forms a strong presumption that the disease is ALWAYS produced by an actual communication of the poison of an infected animal. This conclusion is farther strengthened by the well-attested fact, mentioned by Dr. Hunter, and other writers,† of canine madness not having been known to exist in the Island of Jamaica, for the space of forty years. The distance of this island from the Continent is the probable cause of its freedom from the complaint. For, if the canine poison discovers itself in dogs within three weeks or a month, its importation into the island would be prevented by the death of the infected animal during the voyage. As it appears then highly probable, that canine madness can only be produced by an actual communication of the poison of an infected animal, would not an Act of the Legislature, ordering all dogs to be carefully confined for a certain time (six weeks would probably be sufficient)

* See Dr. Hunter's paper in the "Transactions," &c.

† Consult Dr. Mosely's Treatise on the diseases of tropical Climates, &c.

sufficient) prove adequate to the prevention of the disease, without having recourse to the so frequently suggested, but certainly cruel and nugatory method, of destroying, (or rather of taxing so as to cause to be destroyed) the majority of dogs in the kingdom?